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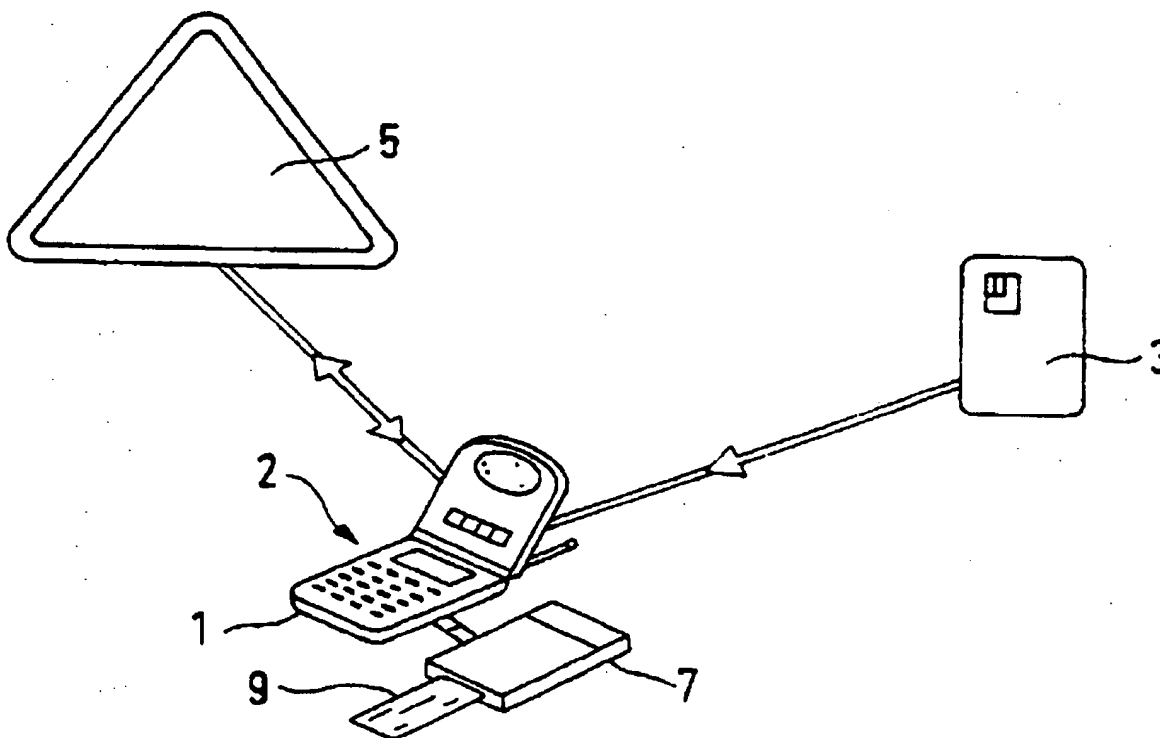
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(54) Titre : SYSTEME ELECTRONIQUE SANS FIL POUR EFFECTUER DES TRANSACTIONS
(54) Title: A WIRELESS ELECTRONIC SYSTEM FOR PERFORMING TRANSACTIONS



(57) Abrégé/Abstract:

In a method for completing purchases and other financial transactions electronically and wirelessly it is provided that a mobile communication device (2) is used in combination with one or more smart cards (3, 6), a printer unit (7, 7') and/or a bar code reading device (11), whereby after a connection is made with a service provider (5) and the user's entitlement is checked one can print for example checks (9) for a desired amount which are provided with a check number allocated "on-air."

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Abstract

In a method for completing purchases and other financial transactions electronically and wirelessly it is provided that a mobile communication device (2) is used in combination with one or more smart cards (3, 6), a printer unit (7, 7') and/or a bar code reading device (11), whereby after a connection is made with a service provider (5) and the user's entitlement is checked one can print for example checks (9) for a desired amount which are provided with a check number allocated "on-air."

Fig. 3

A wireless electronic system for performing transactions

The present invention relates to a method for performing purchases and banking operations and other financial transactions wirelessly and electronically, an "on-air commerce" method so to speak, and to a device for carrying out this method.

Methods for completing transactions electronically are known. When buyer and seller are not in the same place, the buyer's data are usually passed on to the seller via the Internet. Such data contain e.g. the buyer's credit card number or account number, name and further personal information which can easily be abused by unauthorized persons.

There are further variants for completing purchases and banking operations electronically which require the presence of both parties on the spot. For this purpose, shops or department stores must be equipped with special terminals which read the customer's credit card or bank card and verify this information by means of a connection with a central computer of the credit card enterprise or bank. The customer must then confirm the transaction with his signature or his personal identity number (PIN), these entries also being checked.

It is also possible to use a smart card with an integrated circuit and its own processor capacity that can be recharged with an amount, the desired amount then being deducted directly from the smart card after a PIN has been entered. This also requires special devices nowadays for charging the smart card and transferring money from the smart card.

Methods have also recently been developed that permit transactions to be made by means of rechargeable smart cards and GSM cellular phones. One can thereby transfer a desired amount from one's own bank account to one's own smart card and vice versa. It is also known to transfer money from one cellular phone to another.

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Some of the abovementioned methods have relatively low acceptance in several countries because the purchase of the special devices is very expensive. Furthermore, not all potential buyers and sellers are willing to use such electronic methods due to the rapid development of technology. Many people around the world still regard cash or checks as the "safest" and most trustworthy means of payment.

The present invention is therefore based on the problem of providing a method for ensuring cordless, simple and safe completion of transactions without any special devices tied to a certain place. In contrast to "online commerce," the invention has the objective of introducing "on-air commerce."

A further object of the present invention is for the provided method to combine the advantages of ultramodern technology with traditional means of payment to cover all types of financial transactions in such a way as to retain the mobility and speed of the transaction with simultaneous "confidence-building" use of conventional means of payment.

The inventive method should also be employable independently of time and place.

The present invention is also based on the problem of providing an apparatus for carrying out the inventive method.

These problems are solved according to the invention by the features of claim 1 for the method and the features of claim 21 for the apparatus. Further embodiments of the invention can be found in the subclaims.

It is accordingly proposed that every type of financial transaction is completed using a mobile communication device in combination with one or more smart cards, a printer device and/or a bar code reading device. The device has one or two smart card read-write units, whereby if two read-write units are present the two can communicate with each other. The smart card read/write units can be integrated in the mobile communication device or being connected to as external modules.

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According to a first variant of the present invention, an amount can be transferred with a mobile communication device from the user's smart card or the user's account to another target smart card, e.g. the smart card of a seller present on the spot.

For this purpose the user's smart card is inserted into a read-write unit of the mobile communication device. The user is then asked to enter a PIN stored on the smart card via the keys of the device. After the PIN has been entered for activating the smart card, the service provider's number stored on the smart card is dialed and a connection made. The service provider is in this case preferably the user's bank.

Then the user's relevant data stored on the smart card in encrypted form are passed on to the service provider together with a time signal. These data can be the account number, card number and/or expiration date of the smart card. When the data have been transferred the user is asked to enter his PIN for his bank account and the desired amount to be transferred to the target smart card. This entry must take place within a certain time interval, otherwise the transaction is invalid. To increase security, a digital signature can be created and passed on to the service provider.

When this information has been checked by the service provider, the user's smart card is removed from and the target smart card inserted into the read-write unit of the device, the write unit of the device activated by entry of a PIN, and the amount transferred.

Alternatively an Internet connection can be set up and the service provider's website used for entering these data. In such a case the necessary software is stored on the smart card.

The invention thus also makes it possible to transfer a certain amount from the user's smart card to another account, e.g. the seller's account.

The device can be provided according to the invention with an external or internal module containing a printer unit

and paper. The paper can also be special paper with security features such as watermarks.

With this equipment the user can print a "check on demand" or, in another variant of the invention, even a one-way temporary "money voucher."

In this case the business partner, e.g. a seller, needs no smart card of his own, no PIN, etc. When the user's smart card has been inserted, his data checked, and the card-activating PIN and the PIN for his service provider entered, the device's printer unit prints a check or a money voucher for the desired amount.

To increase security, the check or money voucher number is allocated on-air and printed on the check or money voucher together with the user's and/or the seller's (consignee's) account number and optionally his name and the transaction date and time. In the case of a money voucher a transaction number is generated and also printed for security reasons.

In order to enable the credit institute to check a person's right concerning the money voucher, the voucher issuer can pass on to the service provider the name or account number or a further combination of digits and letters identifying the other person.

These data, or some of them, can be stored in a bar code printed on the check or money voucher. Then a report with all details of the transaction can also be printed. This report can contain information on the user's account balance.

It is also possible to print guaranteed covered checks by entering the desired amount and having the bank verify the availability of the amount. In this case the amount is also printed on the check. The checks must in any case be signed by the user.

The advantage of this method is obvious. Instead of using a conventional credit card or a check card with checks such as eurochecks, which can be stolen and abused together with the owner's signature, it is possible to print a check or a money voucher for the desired amount using one or more PINs.

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If the mobile communication device is stolen it cannot be used for check or voucher printing purposes due to the high security measures including PINs and, in the case of checks, a signature which is unknown to third persons.

Furthermore, the transaction amounts for most credit cards and checks such as eurochecks are limited. In contrast to these methods, the present invention offers maximum security and flexibility.

Checks and especially guaranteed checks, unlike credit cards, are accepted in all countries and by every shopkeeper because they are very trustworthy means of payment equivalent to cash. In addition, shopkeepers prefer payment by check because this does not require them to pay a service charge to a credit card company.

Printing money vouchers has similar advantages and is even more trustworthy for shopkeepers, since the amount is transferred directly from the user's account on the voucher.

Furthermore, the invention is very advantageous for banking institutes since less personnel is needed.

A further variant of the present invention provides the possibility of reading a money voucher and transmitting the data to the service provider who in turn transfers the corresponding amount to the desired account. The voucher can be read using a bar code reading device attached to the mobile communication device. Alternatively the user can enter the voucher data using the device's keyboard.

Invoices having a suitable bar code containing the issuer's account number as well as the invoiced amount can also be paid using the method after a connection has been made with the service provider.

The invention makes it possible to send money to another mobile communication device using the money voucher printing feature. The printer of the target mobile communication device prints the money voucher, while the corresponding amount is deducted from the sender's account or smart card.

A further variant provides that airplane, concert, lotto and lottery tickets, etc., can also be printed after a connection has been made with further service enterprises, the amount being deducted either from the user's smart card or from his account.

In order to increase the security features of the inventive method further, one can use biometric identification and authentication methods. It is e.g. possible to use an internal or external fingerprint reading device and have the service provider check these data.

In this way it is possible to combine the advantages of ultramodern technology with traditional means of payment.

The invention will be explained in more detail in the following with reference to the drawing which schematically shows preferred embodiments.

Figure 1 shows a schematic view of a first variant of the inventive method;

Figure 2 shows a schematic view of a second variant of the inventive method;

Figure 3 shows a schematic view of a third variant of the inventive method;

Figure 4 shows a schematic view of a fourth variant of the inventive method;

Figure 5 shows a schematic view of an apparatus for carrying out the inventive method; and

Figure 6 shows a schematic view of a variant of an apparatus for carrying out the inventive method.

According to Figure 1, the buyer's smart card 3 is inserted into read-write unit 1 of mobile communication device 2. The mobile communication device shown in Figure 1 is a common cellular phone, but a notebook computer and other devices suitable for mobile communication can also be used. The buyer is then optionally asked to enter a PIN stored on smart card 3 via dialing keyboard 4 of device 2.

Then a telephonic GSM connection to the buyer's service provider 5 is made by dialing the service provider's number.

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This takes place automatically but can also be done manually by the buyer. The service provider is in this case preferably the buyer's bank but can also be a credit card institute or further service enterprise.

In a variant not shown here the connection is an Internet connection, in which case the Internet software is implemented on the smart card. The connection can also be made via satellite or any other suitable method.

Then the buyer's relevant data stored on smart card 3 in encrypted form are passed on to service provider 5. The data expediently contain the buyer's account number, card number and/or expiration date of the smart card. For security reasons the data are provided with the time and date so that timing can be performed.

When the data have been transferred the user is asked, according to the invention, to enter his PIN for his bank account and the desired amount to be transferred to target smart card 6. This entry must take place within a certain time interval or else the transaction is invalid, which increases the transaction security.

When this information has been checked by the service provider, the seller's target smart card 6 is inserted into read-write unit 1 of device 2, the write unit of the device activated by entry of a PIN, and the amount transferred.

This makes it possible to perform transactions with only one device independently of place.

When the transaction has been completed a transaction record is printed by device's printer 7 if desired. The record can additionally contain information about the account's balance.

Printer 7 shown in Figure 1 is an external module; it is also possible to provide the mobile communication device with an internal printer.

As shown in Figure 2, the present invention also makes it possible to transfer a certain amount from the buyer's smart

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card or the buyer's account 8' to another account 8, e.g. a seller's account. This requires the following steps:

the buyer inserting his smart card 3 into read-write unit 1 of mobile communication device 2;

optionally entering a PIN stored on smart card 3 for activating smart card 3 via keyboard 4 of device 2;

making a connection with the buyer's service provider by automatically dialing a number stored on smart card 3;

passing on to the service provider the buyer's relevant data stored on smart card 3 in encrypted form together with a time signal;

entering a PIN for an account kept with the service provider and a desired amount to be transferred from the buyer's smart card 3 inserted into read-write unit 1 to the seller's target account 8, and a target account number;

the service provider checking the entries; and

activating read-write unit 1 of device 2 and transferring the amount from the buyer's smart card 3 or account 8' to the seller's target account 8.

Entry of the PIN stored on smart card 3 for activating smart card 3 is optional and increases the transaction security.

As mentioned above, a transaction record can be printed at the end of the transaction if desired.

According to a further preferred embodiment of the present invention, shown in Figure 3, checks can be printed on the spot by means of printer 7 contained in or connected to the mobile communication device.

This embodiment is especially advantageous because it thus combines the advantages of ultramodern technology with traditional means of payment in such a way as to retain the user's mobility and independence and the speed of the transaction, with simultaneous "confidence-building" use of conventional means of payment.

A further advantage of this method is that the business partner, e.g. a seller, needs no smart card of his own, no mobile communication device, no PIN, etc.

One proceeds as follows according to the invention. In contrast to the first two transaction variants described above, printer unit 7 of device 2 prints check 9 for the desired amount when the user's smart card 3 has been inserted, his data checked, and the card-activating PIN (optional) and the PIN for his service provider entered. The paper in the container of the printer unit has a check format and is preferably special paper provided with security marks.

According to another embodiment (not shown) the paper is contained in reels, thus minimizing the dimensions of the printer unit.

The check number is allocated on-air and printed on the check together with the user's account number and name and the transaction date and time. The check can then be signed by the user as usual. Then a report with all details of the transaction can also be printed. It is also possible to print on the check a combination of digits/letters identifying the check issuer.

In order to increase the acceptance of the checks especially for high amounts, the buyer can also print guaranteed covered checks 9 by entering the desired amount and having the bank verify the availability of the amount. In this case the amount is also printed on the check.

A further variant of the invention (not shown) provides the printing of money vouchers instead of checks after the buyer has been authenticated with service provider 5. The money vouchers do not need to be signed like checks. Another difference is that the money voucher's amount is immediately deducted from the issuer's account or smart card.

A money voucher number is also allocated on-air and printed on the money voucher together with the user's account number and optionally his name and the transaction date and

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time. For security reasons a transaction number is generated and also printed on the voucher together with the amount.

In order to increase the transaction security further and avoid possible abuse of the money voucher by a third person, the name of the recipient of the money voucher is passed on to the service provider and also printed on the money voucher. The name can be entered via the keyboard of the mobile communication device.

If the money voucher recipient wants to remain anonymous, a sequence of digits or letters can be printed on the money voucher instead of the name, this sequence being known to the recipient's financial institution and/or the voucher issuer's service provider, which likewise excludes potential abuse by unauthorized persons. It is also possible to print the issuer's name or a combination of letters/digits identifying the issuer as well as to provide the voucher with the necessary space for a signature.

As a further feature of the present invention, a bar code containing all the abovementioned data is printed on the voucher online.

The seller obtains the printed voucher, sends it to his bank and receives the corresponding amount. The validity of a voucher can be checked by means of the unique combination of the transaction number and the voucher (serial) number. Following this procedure the voucher is invalid.

The recipient of a check or a voucher can off course check the validity of the check or voucher using the transaction and/or check number by making a call to the service provider.

Another variant of the invention, shown in Figure 4, allows one person, i.e. a buyer, to send voucher 10 from his mobile communication device to another person's mobile communication device. The recipient of voucher 10 does not need to take it to a bank in order to get the money. He can even per-

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If the recipient of the money voucher is unavailable, the transaction data are stored by the service provider and passed on to the recipient at a later time. The sender's service provider can alternatively pass the data on to the recipient's service provider who in turn sets up a connection with the recipient.

A user can also print a money voucher for his personal use.

According to the invention the mobile communication device can have a standby function so that the transaction data are received but the voucher is only printed after activation of printer unit 7' by the recipient.

The seller can, according to the invention, transfer the amount represented by the money voucher to his account 8 or his smart card 6 by reading the bar code printed on voucher 10 by means of bar code reading unit 11 attached to his mobile communication device 2'. Bar code reading unit 11 shown in Figure 4 is an external module, but it may also be an internal module. It is also possible to build the printer unit and the bar code reading unit as one unit.

Before reading the bar code the seller must make a connection with his service provider 5' performing the same steps as described above.

In another variant of the present invention (not shown), a user can pay invoices on-air by connecting to his service provider as described above and reading a bar code printed on the invoice.

The amount to be transferred is entered by the bar code printed on an invoice being read by a bar code reading device attached to the mobile communication device, the bar code containing the invoice issuer's account number and name and the invoice number and invoiced amount.

The service provider checks the entries, and the amount represented by the invoice is transferred to the account contained in the invoice's bar code from the user's account or smart card.

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Instead of the bar code being read, the data can also be entered using the keyboard of the mobile communication device.

A further variant of the invention, which is not shown, provides that airplane, concert, lotto and lottery tickets, etc., can also be printed online, the amount being deducted either from the user's smart card or from his account. For this purpose a connection must be made with a corresponding service enterprise, e.g. airline or travel agency, the transaction taking place analogously. If the user does not have a suitable account with the corresponding service enterprise, a connection can be made between the user's bank and the service enterprise.

To increase security, all transactions described above can be confirmed using a digital signature which is transmitted with the relevant data. The time signal sent serves as a further security aspect since the transaction is interrupted if a certain time interval is exceeded between the passing on of the time signal and the following step.

Entry of the PIN codes can be replaced by a check of biometric features such as fingerprints.

According to the invention, the user of the method presented here can determine the type of transaction to be completed using the keyboard of his mobile communication device. The corresponding menu software can be deposited on the smart card and/or with the service provider. In addition, it is possible to fix an upper limit for the particular transaction amount or for the sum of all transaction amounts within a certain time period. This is important in particular if inexperienced persons, e.g. teenagers, are using the inventive method.

According to Figure 5, mobile communication device 2 for carrying out the method preferably has the format of a conventional mobile phone.

In an especially advantageous embodiment of the mobile communication device according to the invention shown in Fig-

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ure 5, printer unit 7 is hinged in removable fashion to the side of mobile communication device 2 facing away from dialing keyboard 4. As likewise shown in Figure 5, bar code reading unit 11 can be received by a holder in printer unit 7 and pulled out as required.

At least one interface 12 is provided for the connection between printer unit 7 and/or bar code reading unit 11 and mobile communication device 2. In addition, the paper used can have an individual design for each user.

Figure 6 shows a further variant of the mobile communication device 2 according to the present invention. The printer unit 7 is integrated in the mobile phone device.

In order to increase the transaction security for all users of the inventive method and especially in order to avoid abuse by not authorized persons the present invention provides the possibility to use a further smart-card, containing in encrypted form several combinations of digits/letters identifying all service providers participating to the „an air“ system. These combinations of digits/letters are for security reasons unknown to the users.

In order to check the validity of the transaction, a user e.g. a seller can insert his so called „verification“ smart card into the read/write unit of the GSM-device. Then the bank (or the service provider) sends his identification code which is compared with the code (combination of digits/letters) stored on the seller's verification smart card. The comparison is done by the software stored on the verification card, so that any manipulation can be excluded.

After a successful comparison of the codes the transaction can be continued.

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Additionally or alternatively the verification smart card can contain the user's name and a second letter/digit combination identifying the user. Thus the service provider has to return to the mobile communication device the combination of letters and/or digits identifying the seller. Also in this case the comparison is done by the smart card of the seller. This feature guarantees that the service provider connected with the GSM-device is an authorized one, since he knows the second combination of letters and/or digits identifying the seller to the „on air system“.

To facilitate the handling the functionality of the verification smart card can be built in in the other „transaction“ Smart-Cards 3, 6.

Within the framework of the present invention it is possible to activate the printer unit e.g. for check or voucher printing by inserting a „prepaid“ smart card containing a certain amount of money in the read/write unit of the inventive device even if the mobile communication device is switched off.

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Claims

1. A method for performing purchases and other financial transactions wirelessly and electronically with a mobile communication device, characterized by the following steps:

inserting a smart card (3) into a read-write unit (1) of a mobile communication device (2);

making a connection with a service provider (5) by dialing a number;

passing on to the service provider (5) the user's relevant data stored on the smart card (3) in encrypted form together with a time signal;

entering a PIN for an account (8') kept with the service provider (5) and a desired amount to be transferred and/or the desired type of transaction together with a time signal.

2. The method of claim 1, characterized by the additional step of confirming the transaction using a digital signature.

3. The method of claim 1 or 2, characterized by the additional steps of:

inserting a second, target smart card (6) into the read-write unit (1) of the device (2);

the service provider (5) checking the entries; and

activating the read-write unit (1) of the device (2) and transferring the amount from the first smart card (3) or from the account (8') to the target smart card (6).

4. The method of claim 1 or 2, characterized by the additional steps of:

entering a target account number for a target account (8) by means of a keyboard (4) of the mobile communication device (2);

the service provider (5) checking the entries; and

activating the read-write unit (1) of the device (2) and transferring the amount from the user's smart card (3) or the user's account (8) to the desired account (8').

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5. The method of claim 1 or 2, characterized by the additional steps of:

the service provider (5) allocating a check number;

printing a check (9) by means of a printer unit (7) attached to the mobile communication device (2), whereby the user's account number and name and the check number and date and time of allocation of the check number are printed on the check (9).

6. The method of claim 5, characterized in that the service provider (5) checks the availability of the amount in the user's account, and the amount is printed on the check (9).

7. The method of claim 1 or 2, characterized by the additional steps of:

the service provider (5) allocating a voucher number and a transaction number;

printing a voucher (10) by means of a printer unit (7) attached to the mobile communication device (2), whereby the user's account number and name and the voucher number and date and time of allocation of the voucher number as well as the transaction number are printed on the voucher and the amount is represented by the voucher; and

deducting the voucher's amount from the user's account or the user's smart card (3).

8. The method of claim 7, characterized in that the name of the recipient of the money voucher (10) and/or a combination of digits/letters identifying the recipient are printed on the money voucher (10), being optionally passed on to the sender's service provider (5).

9. The method of claim 1 or 2, characterized by the additional steps of:

entering a phone or device number for a target mobile communication device (2') together with the account number or

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a combination of digits and letters identifying the owner of said device (2');;

the service provider (5) allocating a voucher number and a transaction number and connecting to the target mobile communication device (2');;

printing a voucher (10) by means of a printer unit (7') attached to the target mobile communication device (2'), whereby the voucher issuer's account number and name and the voucher number and date and time of allocation of the voucher number as well as the transaction number are printed on the voucher (10) and the amount is represented by the voucher (10); and

deducting the voucher's amount from the issuer's account (8') or the issuer's smart card (3).

10. The method of claim 9, characterized in that the name of the recipient or a combination of digits/letters identifying the recipient is printed on the voucher (10), the name of the recipient or the combination of digits/letter identifying the recipient being entered by the sender of the money voucher (10) and passed on to the service provider (5) and/or automatically printed simultaneously by corresponding settings of the recipient's mobile communication device (2').

11. The method according to claims 5 to 10, characterized by the additional step of printing a bar code on the money voucher (10) containing the other printed data.

12. The method of claim 1 or 2, characterized in that the amount to be transferred is entered by the bar code printed on a voucher (10) being read by a bar code reading device (11) attached to the mobile communication device (2), the bar code containing the voucher issuer's account number and name and the voucher number and date and time of allocation of the voucher number, the name of the voucher recipient or a combination of digits and letters identifying the voucher recipient.

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ent as well as the voucher issuing transaction number and the voucher's amount, with the additional steps of:

the service provider (5) checking the entries; and
transferring the amount represented by the voucher (10) to the desired account (8, 8') or smart card (3, 6).

13. The method of claim 1 or 2, characterized in that the amount to be transferred is entered by the bar code printed on an invoice being read by a bar code reading device (11) attached to the mobile communication device (2), the bar code containing the invoice issuer's account number and name and the invoice number and the invoiced amount, with the additional steps of:

the service provider (5) checking the entries; and
transferring the amount represented by the invoice to the account contained in the invoice's bar code.

14. The method of claim 1 or 2, characterized by the following additional steps:

entering further data relevant for the transaction by means of the keyboard (4) of the mobile communication device (2);

the service provider (5) checking the entered data and allocating a transaction number;

printing service products such as airplane, admission, lottery tickets, etc., by means of a printer unit (7) connected with the mobile communication device (2), these products being additionally printed with the user's account number and name and with the transaction number and date and time of allocation of the transaction number; and

deducting the amount from the user's account (8') or his smart card (3).

15. The method of any of the preceding claims, characterized in that a record is printed at the end of the transaction by means of a printer unit (7) attached to the mobile communication device (2).

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16. The method of claim 15, characterized in that the record contains information about the user's account balance.
17. The method of any of the preceding claims, characterized in that the number of the service provider (5) is stored on the smart card (3) and dialed automatically.
18. The method of any of the preceding claims, characterized in that the connection is a telephone connection, a satellite connection, an Internet connection or any suitable connection.
19. The method of any of the preceding claims, characterized in that the transaction is interrupted if a certain time interval is exceeded between the passing on of the time signal and the following step.
20. The method of any of the preceding claims, characterized in that the smart cards (3, 6) inserted into the read-write unit (1) of the mobile communication device (2, 2') are activated by entering a PIN stored on the smart cards (3, 6) via a keyboard (4) of the device (2, 2').
21. The method of any of the preceding claims, whereby the genuineness of the connection to the service provider is checked by means of a verification smart card to be inserted in the read/write unit (1) of the mobile communication device (2, 2') containing digit/letter combinations unknown to the users and identifying one or more service providers (5) with following additional steps:
- inserting the verification smart card into the read-write unit (1) of the device (2, 2');

asking the service provider (5) to enter his identification digit/letter combination;

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comparing the identification digit/letter combination sent by the provider with the digit/letter combination stored on the verification smart card; and by successful result of the comparison

continuing the transaction.

22. The method according to claim 21, whereby the verification card contains additionally the name of the user and a digit/letter combination identifying him in combination with his name, characterized by the following additional steps:

inserting the verification smart card into the read-write unit (1) of the device (2, 2');

asking the service provider (5) to enter the digit/letter combination corresponding to the user's name;

comparing the digit/letter combination sent by the provider with the digit/letter combination stored on the verification smart card; and by successful result of the comparison

continuing the transaction.

23. The method according to claim 21 or 22 characterized in that the functionality of the verification smart card is integrated in the transaction smart cards (3, 6).

24. An apparatus for carrying out the method of any of claims 1 to 23, characterized in that the apparatus is a mobile communication device (2) having at least one read-write unit (1) for smart cards (3, 6), an internal or external printer unit (7, 7') with paper and an internal or external bar code reading unit (11).

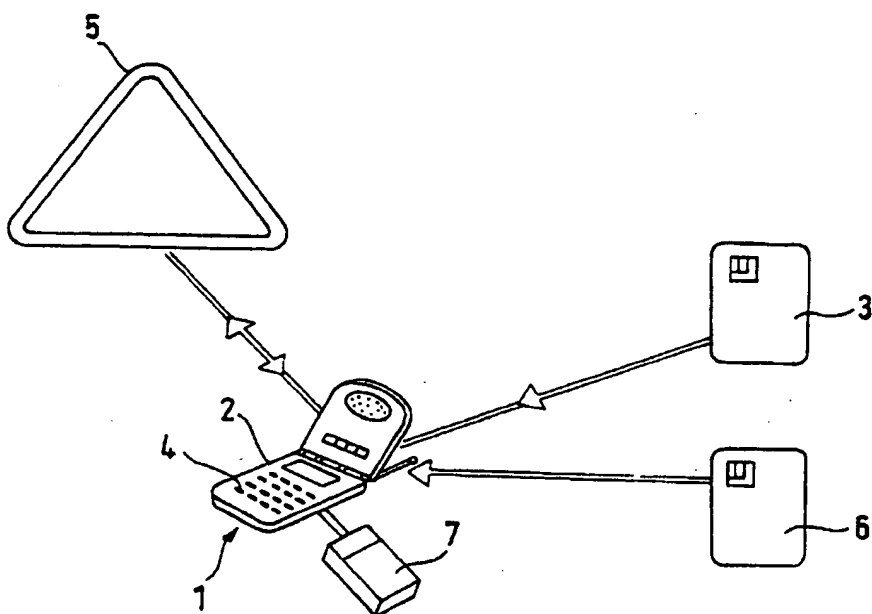
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25. The apparatus of claim 24, characterized in that the paper of the printer unit (7, 7') has a check format.
26. The apparatus of claim 24 or 25, characterized in that the paper of the printer unit (7, 7') is a paper reel.
27. The apparatus of any of claims 24 to 26, characterized in that the device (2) contains two read-write units (1) which communicate with each other.
28. The apparatus of any of claims 24 to 27, characterized in that the printer unit (7, 7') is hinged in removable fashion to one side of the mobile communication device (2, 2'), and the printer unit (7, 7') contains a bar code reading device (11).
29. The apparatus of any of claims 24 to 27, characterized in that the printer unit (7, 7') is integrated in the mobile communication device (2, 2').
30. The apparatus of claim 28 or 29, characterized in that the printer unit (7, 7') has a holder for receiving the bar code reading device (11).
31. The apparatus of any of claims 24 to 30, characterized in that the mobile communication device (2) has one or more interfaces (12) serving to connect to the printer unit (7, 7') and/or the bar code reading device (11).

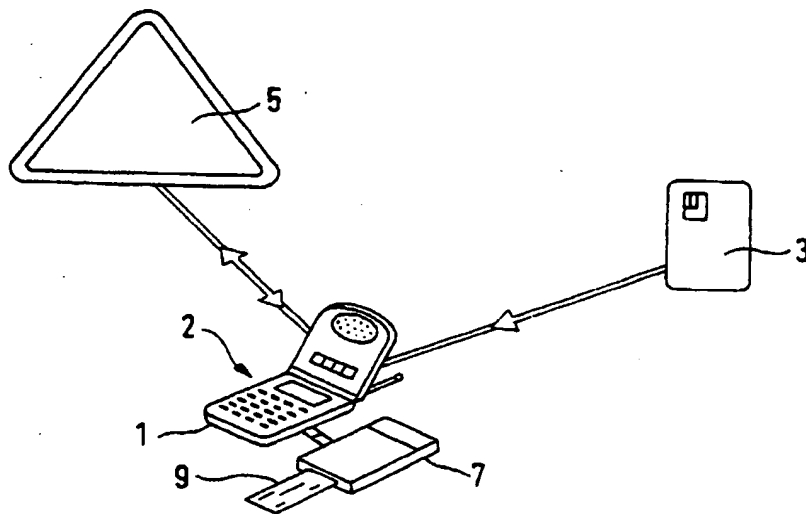
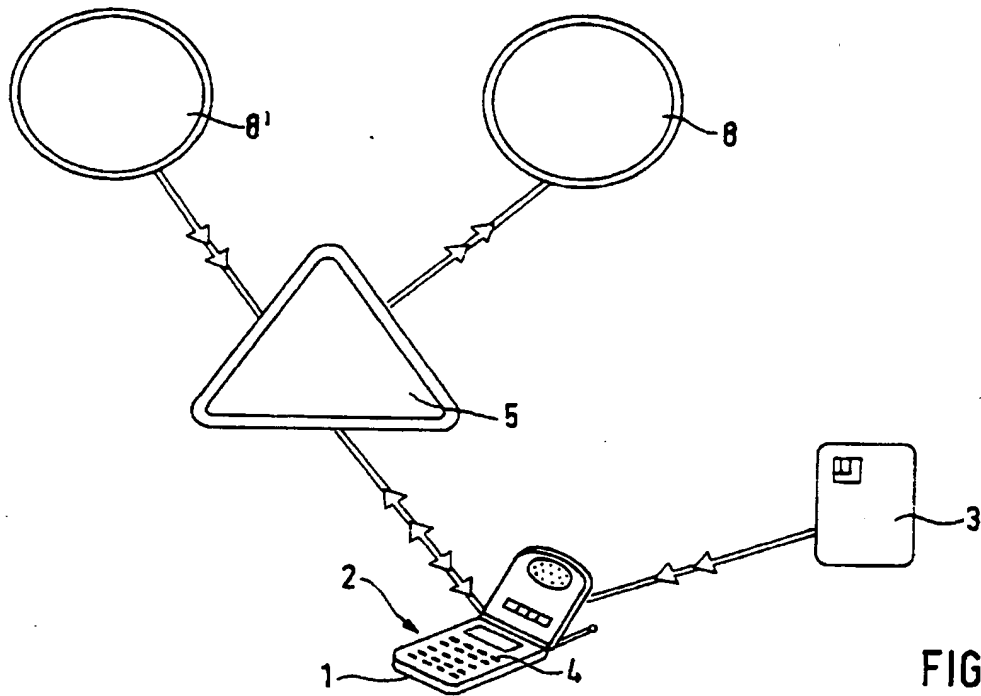
Port & Biggar
Tawa, Canada
Patent Agents

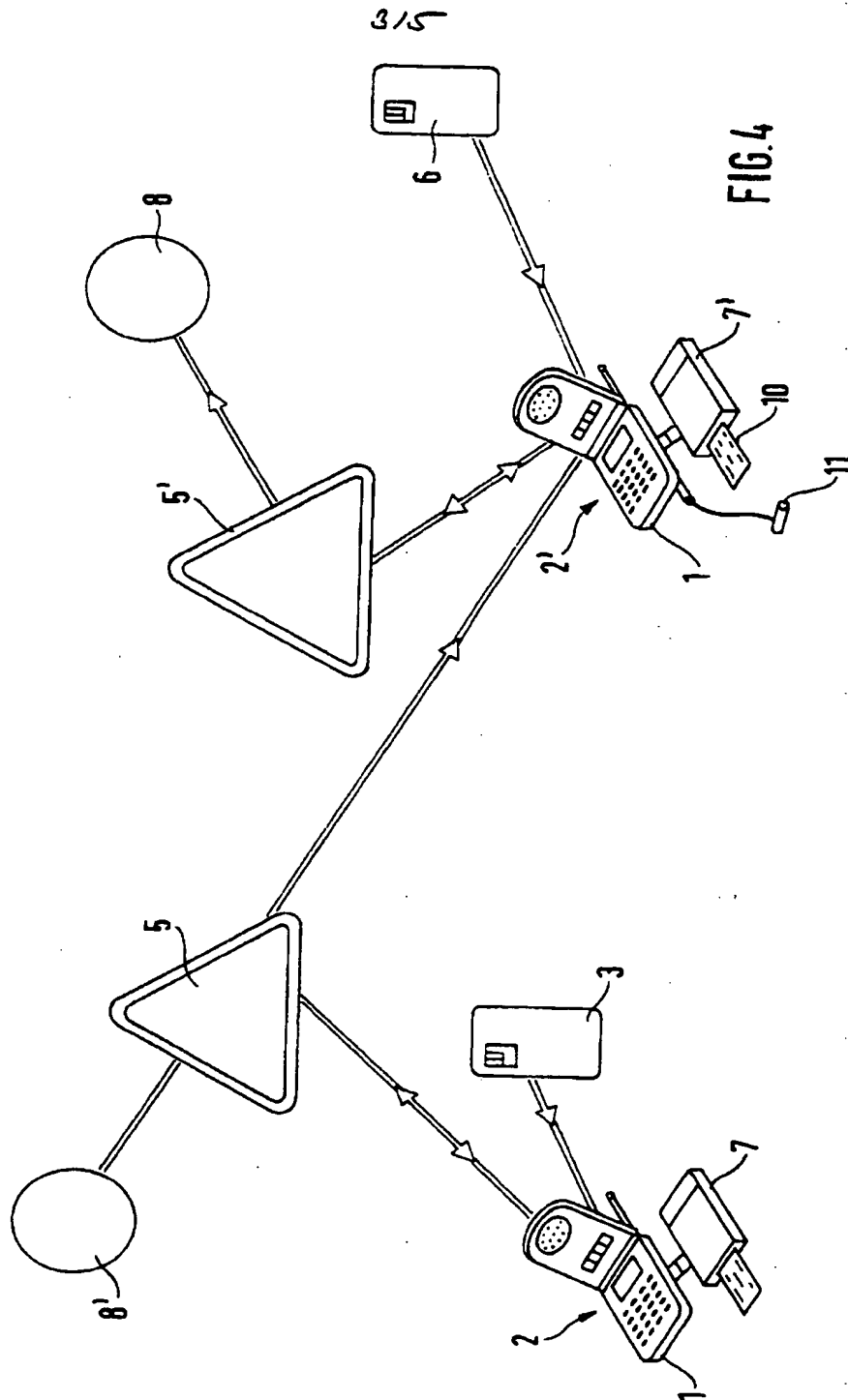
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FIG.1



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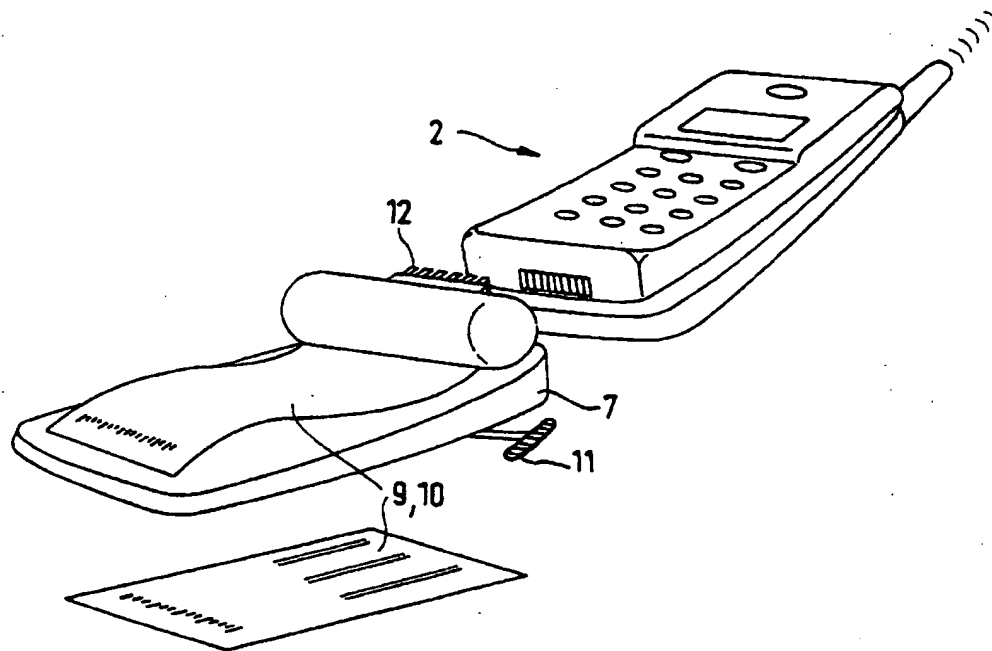


FIG. 5

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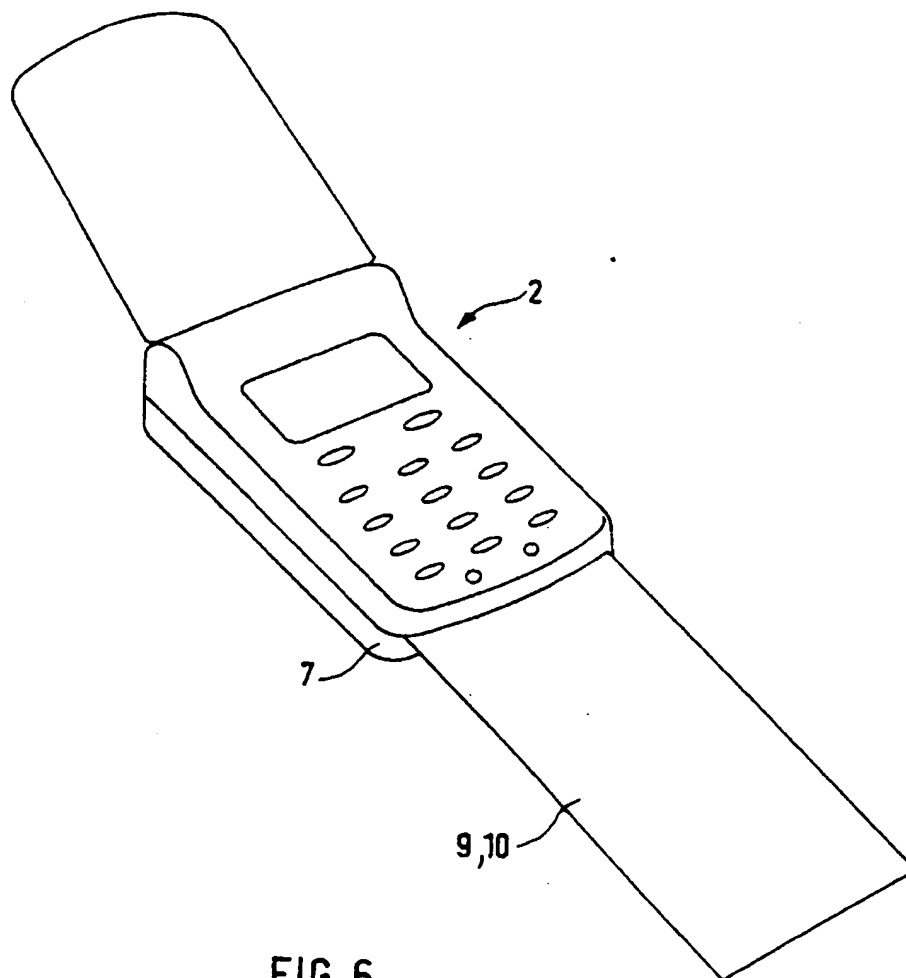


FIG. 6